

Fourteen Years of Change

Key Initiatives 1996 through 2010

Mecklenburg County Code Enforcement and our advisory board, the Building-Development Commission (BDC), have worked together over the years to advance a wide range of initiatives, benefitting both Mecklenburg County citizens as well as the Department's customers and staff. The following is a short list of the most significant initiatives, written in no particular order of significance.

Internet Permitting

Mecklenburg County has a long history of contractor-permitting by direct computer entry. In 1992, this was available to selected contractors by remote access, but in 1999, we provided Internet Permitting to all contractors not subject to plan review (or by scope of work verification). We manage approximately 40-50% of our permit volume through Internet Permitting, which allows contractors to apply for and receive permits by Internet. They pay fees by a direct charge to accounts they hold with Mecklenburg County.

Internet Support of Inspections

Mecklenburg County introduced electronic support of inspections in 1993, using an interactive voice response (IVR) system. This began our migration away from the traditional management system of paper-based inspections. That initial IVR effort has been expanded to include full access to all inspection functions by computer (office based or field laptop) via the Internet, as well as via web enabled phones (WAP Wireless). Today, customers have a choice of three electronic modes with which to place inspection requests and monitor results. The Department augments this with the traditional "Inspections Support Center" for customers needing person-to-person attention.

- Mecklenburg County is a national leader in the use of technology that supports field inspections. In 1992, we were one of the first authorities in the country to introduce mobile data terminal use by Building Inspectors in the field. This system migrated to "windows/laptop" technology in 1999. Today, field inspections are fully automated by Mecklenburg County's third generation technology, our POSSE P&I System.

Consistency Teams

Combining inspector mobile data terminal use with mobile phones, Mecklenburg County inspectors became 95% field-based in 1995, reporting directly to their assigned territories daily and visiting the office every 10 days for administrative meetings. While this was extremely efficient, it deprived inspectors of office time to match notes on Code interpretations. The result was an increase in customer concern over the consistency of interpretations. Mecklenburg County responded in 1997 by introducing "Consistency Teams" in each inspection discipline. The Teams deal with all consistency issues from the industry, discuss them in regular meetings attended by the industry, and render decisions on correct local interpretations of the Code. These interpretations are, in turn, distributed to Field Inspectors, the industry, and posted online. Since their introduction, Consistency Teams have been credited with solving a wide range of interpretation issues, as well as "doing wonders" to bring the Department and industry together.

Internet Access to All Documents and Records

North Carolina public records laws are demanding; the Department retains records for two to six years (and longer for some designated projects). Customers often seek copies of permitting and inspection records on specific addresses, as well as documentation on Certificates of Occupancies. Historically, Code Enforcement authorities have provided these records in paper form, supported by using a microfilm system to manage the paper volume. In 2001, using imaging technology, Code Enforcement completed migration to a completely paperless process, and made all records available to customers by Internet. Today, the old “trip down to Hal Marshal Center” to research records is a thing of the past, with most customers using the Internet to address their records’ documentation needs.

Express Review

Introduced in 1997-1998, Express Review is a premium service/premium fee program. Customers schedule a Commercial Plan Review slot in advance, with the owner’s design team present during the review. A&E’s are given the opportunity to make and initial minor changes, increasing the likelihood of passing review and gaining the permit within 24 hours. Consequently, one of the significant benefits of Express Review is a high success rate. Express Reviews typically pass the first review 85% of the time, in contrast to the regular reviews, which average a 50%+/-success rate. In addition, A&E’s appreciate the ability to talk to staff during the process to explain their plans.

Residential Technical Answer Center (RTAC)

Introduced in 1998, this service focuses on residential customers by giving them access to code information without the need to contact either the Trades Chief or the area inspector. Customers may walk-in, telephone, fax or e-mail questions to staff who provide quick answers to the code problems described. Not intended to be a second opinion, this service (as CTAC) is focused on projects without an assigned plan reviewer or inspector. Since its introduction, RTAC has averaged approximately 1000 customer calls per month, testifying to its value to the residential customer.

Residential Drawing Submittal (RDS) Process

In response to problems at Pages Pond and other large single family (SF) sites, the Department worked with inspectors and the industry to outline a limited RDS Process. Focusing on the projects with the highest degree of risk from the absence of plan review, Mecklenburg County introduced the new program in 1999, requiring residential plan review on all new construction SF projects larger than 2500 sq. ft. (and other criteria). On March 1, 2008, the Program was expanded to include all SF projects with new construction, regardless of size.

Code Compliance Task Force (CCTF) re-inspection fee changes

The Code Compliance Task Force addressed the problem of an extremely high inspection failure rate, which increased both the cost of inspections and inspection response time to customers. Working together, the industry and Department developed a number of significant changes (posting contractor failure rates, etc.), one of which was the complete overhaul of Mecklenburg’s re-inspection fee system. The CCTF sought to re-align the Department fee structure, adding cost to customers who use more inspection resources, and decreasing fees for customers who consistently use fewer inspection services. This resulted in a re-inspection fee system in Mecklenburg County that automatically calculates a project’s inspection failure rate at the issuance of a Certificate of Occupancy. Projects with less than a 15% failure rate receive an account credit of up to 20% (revised in March, 2010, to a maximum of 10% on commercial projects and 15% on residential projects). Conversely, projects above the 15% inspection failure rate are charged an additional permit fee, which increases as the failure rate increases. Two years after this change went into service, Mecklenburg’s inspection failure rate fell from the 35% range to 25%, saving significant inspection resources.

Commercial Technical Assistance Center (CTAC)

When the Residential Technical Answer Center (RTAC) proved to be successful, we introduced the equivalent commercial code tool, CTAC, in 2000. Again, the idea was to give customers access to commercial code information and quick answers to the code problems described, without the need to contact either the Trades Chief or the area inspector. As in RTAC, customers may walk-in, telephone, fax or e-mail questions to staff, and the information provided is not intended to be a second opinion. This service also is focused on projects without an assigned plan reviewer or inspector. Since its introduction, CTAC has averaged approximately 800 customer calls per month. Based on this success, in 2003, CTAC expanded into small, quick plan reviews as part of the OnSchedule overhaul of Commercial Plan Review.

Third Party Inspections/Plan Review Program

In 1999, at the request of the BDC, and through the legislative initiative of Senator Dan Clodfelter and State Representative Claude Wilson, the NC General Assembly revised the General Statutes to allow use of third party code enforcement work, with specified conflict of interest limits. This Program allows the customer to contract with the Department and pay for “added code enforcement services.” The Department can contract with a third party (carrying NC Code Official Qualifications) to provide the service on the designated project, with the inspection schedule tailored to specific contractor needs on a day-to-day basis. In 2000, at the request of the Charlotte Douglas Airport, the Department initiated third party inspections on the E Concourse expansion. It met with great success. Since that time, several projects at the Airport have followed the same route, as well as many high-rise projects, specifically for the electrical finish stage. In 2005, the Northlake Mall project requested third party plan review. We provided this “added code enforcement service”, which proved to be critically important in the Mall meeting its opening day schedule; the mall developer, Simon Properties, considered it a great success.

Carbon Monoxide Alarm Ordinance

In 2000, four people died of carbon monoxide poisoning at Cedar Mill Condominiums. The Department worked with the Charlotte Fire Department and the County Fire Marshal’s Office to outline a Five-Part Carbon Monoxide Strategy. A key part of this Strategy was the introduction of a countywide requirement for carbon monoxide (CO) alarms in residential units. Since this would be the first CO alarm ordinance in the Southeast US, it was aggressively debated. Using a Health Ordinance vehicle, the Mecklenburg BOCC voted in 2001 to enact a carbon monoxide alarm ordinance in all residential units with fossil fuel burning devices. After the December 2002 ice storm, the BOCC voted to extend this ordinance, requiring carbon monoxide alarms in all residential units; this addressed the 25% national incidence of CO poisoning from portable sources.

Redesign of All Customer Used Computer Screens

In 2001, the Department initiated a user focus group to deal with customer needs regarding data produced by the Permitting and Inspection (P&I) System. This focus group conducted a thorough audit of the Department’s “legacy” computer P&I program and screens, identifying where things worked and where they needed to change. Customers subsequently worked with staff to design a series of screens that addressed their specific needs, giving them useful information, in a format that worked best for them. These screens became design templates for the POSSE system development, and were introduced with the Department’s conversion of the P&I system to POSSE in December 2003.

Plan Review Task Force Commercial Permit Changes

The Plan Review Task Force (PRTF) worked to address three problems: a) high plan review failure rates, b) the perception of an inefficient review process, and c) communication problems between staff and A/E's. On 11/21/2000 the PRTF submitted a detailed proposal for 20 changes to the BDC, including the following:

- **Gatekeeping**: responding to a challenge to reduce the time required to move plans into the system, this tool screens out incomplete drawings, which would have failed review as "incomplete," and which consumed plan review staff time. Since implementation in 2001, the "Gate" has screened out approximately 35% of all drawings as "incomplete-not ready for review."
- **Written plan review comments available by Internet**: requested by A/E's, this required two changes in the process. Plan reviewers switched from redline markup of drawings to text comments typed into the computer. In 2002, automation made it possible for customers to read plan review comments by Internet on review completion, thereby strengthening communication with A/E's.
- **Use of "Approved as Noted" criteria**: the practice of redlining drawings for permit issuance has always been controversial; A/E's often believe it should be used extensively. However, it does take time to create the markups. PRTF members developed consensus criteria, when use of "approved as noted" is appropriate. Over time, staff use of this tool has grown significantly. It is one of many reasons why first plan review pass rates have improved from 21% in 1999 to over 50% today.

Redesign of the Code Enforcement Website as www.meckpermit.com

This same 2001 user focus group closed out its work by noting that the Department's website had a wealth of information, but was often difficult to access, especially for the infrequent user. As a result, the Department retained an outside consultant who worked with customers to design a new website. The consultant used understandable graphics and reorganized the format to create an intuitively navigable site. In February 2002, the Department introduced www.meckpermit.com as the new Internet face of the Department. The website's design received high marks from customers for "user friendliness," and continues to evolve as a strong communication tool, supporting the Department's goals of public safety and customer service.

- In 2007, the customer focus group reconvened to work with the Department in evaluating the website's effectiveness. This resulted in the redesign of meckpermit.com to address several customer needs, as well as to balance information on the site. The new website design was placed in service on 7/6//2007.

NC Rehab Code

The creation of this Code is owed, in large part, to the Department's determination to bring a good idea to fruition, in the face of obstacles. At the request of a local Task Force, in December 2000 Mecklenburg County presented a proposal to the NC Building Code Council to adopt a pilot program using the widely acclaimed New Jersey Rehab Code. Though the BCC voted the proposal down, the Department pursued it further. Consequently, a legislative initiative emerged in spring 2001 to create a NC Rehab Code four-year pilot. The initiative eventually gained wide support and passed as law. The Governor signed it in August 2001. As the lead local jurisdiction, Mecklenburg County created the Code, while also working with other authorities (Raleigh, New Hanover County) to create training programs and a supporting website. On March 15, 2002, the NC Rehab Code was published electronically and went into service in select jurisdictions.

In March 2004, the Department assembled a two-year report for the legislature, as required by the initial legislation. The report indicated customers found the Code to be easy to use; it saved buildings and could be applied to a wide range of use and construction types. Based on these positive results, and at the urging of Mecklenburg County and other authorities, the BCC adopted the NC Rehab Code for statewide use. It became available as a customer option on January 1, 2006. In June 2006, the Department evaluated our strategy for Rehab Service delivery, with staff and design professionals meeting to discuss appropriate changes. In April 2008, we mainstreamed the Rehab Team and Service into the OnSchedule system, assigning inspections to regular field staff, assuring sufficient capacity as customer demand for the Rehab Code grows.

OnSchedule Commercial Plan Review process

Though the Plan Review Task Force made several process changes in 2001 and 2002, customers still were unable to predict the length of time required to permit a project. Consequently, in fall 2002, the Department designed a new commercial plan review service with predictable timelines. Launched as “OnSchedule” and initiated in March 2003, this radical idea gives customers the ability to schedule all reviews months in advance, and submit plans only the day before, so there are no long waiting periods to enter the review process. When they use plan review comments that are available electronically, applicants achieve far more certainty about the permitting schedule and, ultimately, have significant control over their timelines during plan review.

Meck-SI: Paperless Special Inspections Process and Website

With the implementation of the 2002 NC Building Code, Chapter 17 – Section 1704 was introduced in North Carolina. This Section of the Code, though new to North Carolina, had been used in other areas of the country over the last ten years. After NC’s “qualified adoption of SI,” the Department worked with local professionals and affected industry members to develop a program that addressed relevant code compliance issues, while keeping the process as simple as possible. Given the scale of Mecklenburg’s construction activity, and after reviewing manual processes in other jurisdictions such as Kansas City, the Department realized it could become overwhelmed by paperwork and related administrative demands. We immediately established the goal of making the SI process in Mecklenburg County fully electronic and totally paperless. From July 2004 through January 2006, the Department developed the technology to implement that vision. On January 17, 2006, Code Enforcement initiated www.meck-si.com, the first paperless special inspections process in the United States. The resulting proposal, containing the best ideas about how to perform Special Inspections in Mecklenburg County, quickly became a benchmark for discussion across the State. After a lengthy Ad Hoc Committee process, the NC Building Code Council adopted uniform SI standards across the State of North Carolina similar to the Department’s proposal.

Live-Work Code Change

The Live-Work Code Change initiative originated in 1999 with a local task force request to develop code compliance options for this new unit type occurring in the market. Live-Work units propose to allow residents to operate public service businesses with employees out of their residences, with the public entering the work area of their units to acquire the service. Live-Work units are throwbacks to 1900 era planning, where one walked to all needed services (the typical corner commercial store scattered across many old cities), re-emerging in the current trend known as Traditional Neighborhood Design (TND). However, before the Live-Work Code Change, building codes made no provision for any use other than residential in the International Residential Code. Consequently, through three ICC code change cycles, the Department worked to build a coalition supporting a Live-Work Code provision in the IRC/IBC. This effort was successful in May 2007; as a result, this unit type will become legal nationwide under the 2009 IBC/IRC.

Inspection by Appointment (IBA)

Conceived by an Industry-Department Task Force, IBA gives customers another tool, matching inspector availability to particular construction scheduling problems (IBA joins 3rd Party Inspections and Overtime Inspections in the tool kit customers have available to manage these problems). An added fee and premium service, IBA allows a customer to reserve inspector time in two-hour increments, improving their chances to pass inspections. In this respect, it is the field spin off of the highly successful, office-based Express Review service. In fall, 2007, IBA converted to a mainstream service.

Residential Drawing Submittal-Electronic Plan Submittal (RDS-EPS) Startup

This is Part 1 of the Department's four-part strategy to introduce Electronic Plan Submittal (EPS) to our permitting process, creating totally paperless permitting. The RDS component is a two-part effort, jointly developed with the City of Raleigh, including:

- **Electronic Plan Submittal of Builder Master Plans**: includes the loading of electronic drawing to a website, for review by RDS staff. Comments move electronically between staff and the applicant, resulting in a code compliant electronic drawing, stored permanently on a secure website. Once approved, EPS builder master plans can be combined with a HIP-like tool (see below), to acquire permits 24/7 from any location.
- **Master Plan electronic reciprocal review with Raleigh**: national builders use the same master plans in Raleigh and Mecklenburg. A reciprocal review program, based on common review criteria, allows each authority to accept the others' reviews. This effectively combines RDS review resources of the two authorities, improving efficiency, and reducing permit times, especially in the triennial master plan renewal cycles.

The EPS master plan component began in June 2008. We expect reciprocal review with Raleigh to become a critical component when the residential market regains strength.

Customer Self Permitting - HIP/TIP

Since 2005, the Department has aggressively pursued web based tools that would make *taking out a permit as easy as buying a shirt from Lands End on the Internet*. Beyond the programming required for this vision, the work also involved the development of many related tools (City-Towns dashboard, contractor license scraping, among others). In May of 2008, the Department introduced the 1st self-permitting component, Homeowner Internet Permits (HIP), followed immediately by Trades Internet Permits (TIP). TIP currently manages 25% of our permit load, and we are working toward a goal of a TIP-like tool managing all projects not requiring plan review. Long term this means a HIP/TIP like tool could manage perhaps 70-80% of our permitting work.

Green Permit Rebate Program (GPR)

In spring 2007, the BDC requested work on a fee structure change that gave special status to projects supporting sustainable design. This required action by the NC General Assembly, so the Department worked with the County Attorney and legislators to develop a proposal, which moved successfully through the NC General Assembly as SB 581. Thereafter, we created the Green Permit Rebate Program that rewards projects designed to be sustainable with a permit fee credit, the size of the credit increasing as a project moves from LEED certification (or 1 Green Globe) to LEED platinum (or 4 Green Globes). The program began on January 1, 2008, funded by an allocation of \$1,250,000.

Code Compliance Task Force (CCTF) - Three Part Strategy including Contractor Pass Rate Incentives

The CCTF reconvened in 2005 to address an inspection failure rate at or above 25%, proposing three changes:

- a) Auto-Notification: Allows the contractor to know when an inspector is headed to the site to perform an inspection, in the event the contractor wishes to be available for questions, or discussion of problems.
- b) Point of Contact: Requires all contractors to maintain an e-mail contact point, assuring that Department data on contractor failure rates goes to an accountable person who will respond to problems (high failures, etc).
- c) Pass Rate Incentives Program (aka, high inspection failure rate contractor program): Introduced a new set of requirements for contractors with failure rates above 40% or greater, imposing requirements on site preparation and training.

These changes were phased in from 2006 thru 2007. Since that time the inspection failure rate dropped from 25% range to 13% in April 2010

2008 Proposed Commercial Plan Review Revisions

In 2007, the Department launched an intense three-part evaluation of the commercial permitting process including: a) process engineering evaluation of work flow, b) reconvening of the PRTF, and c) evaluation of plan review scope of work. The result was a consolidated report entitled 2008 Proposed Commercial Plan Review Revisions, which is posted on www.meckpermit.com. In 2008 and 2009, the Department implemented several parts of this strategy including:

- Creating a Mega team and revised the LUESA Fee Ordinance so Mega projects pay the full review cost.
- Expanded the CTAC net
- Revised Approved As Noted criteria
- Electronic addressing
- Weekly web posting of booking lead times
- Revised the Abandoned Projects policy
- Development of tools improving A/E – staff “in review” dialogue, including Interactive Review, Conditional Permitting and Priority Review.

In the last 9 month, the Department has worked with customers to detail out the AE Pass Rate incentives program (see below), as well as the last of the 2008 Proposed Commercial Plan Review Revisions, including.

- Interactive review
- Conditional Permitting
- Collaborative Review
- Team Plan Reviews

These latter four initiatives became available for customer use in April 2010, completing our work on the 2008 Proposed Commercial Plan Review Revisions.

AE Pass Rate Incentives

This program creates a special stream for high performing (high plan review pass rate) A/E's and the converse for A/E's who are challenged in their efforts to produce code compliant construction drawings. AE's are graded quarterly on a pass-fail basis, and ranked by three categories; Superior, Successful and Poor.

- Superior AE's gain access to premium and other services which benefit their project schedules
 - Successful AE's retain access to basic program services, much like today.
 - Poor AE's are restricted from premium service and receive added requirements relevant to past challenges.
- AE Pass rate Incentives started with a July thru December 31, 2009 data collection period. On January 1, 2010, the Department began applying AE team grades. Public posting of AE grades begins on July 10, 2010.

NC Accessibility Code switch to IBC format

The Department has worked on this since NC adopted the current Volume 1-C in 1999; the 671-page NC was at least, four times thicker than any other state accessibility code. Volume 1-C was so voluminous that its format is difficult, if not impossible, to thoroughly understand. Even experienced accessibility consultants note the format itself was an obstacle to understanding requirements (much less identifying those peculiar to North Carolina) and effectively discourages compliance.

Design professionals have long advocated that the best solution for all concerned, especially the accessibility community, is to adopt Chapter 11 of IBC, with eight amendments retaining the technical requirements where NC goes beyond ADA and IBC. In 2005, United Spinal Association compared the NC Volume 1-C to IBC and ADAAG. This document served as the launching point for a final push in the NC Building Code Council to consider a permanent switch to the IBC format accessibility code, with a series of amendments equaling the current NC Accessibility Code Regulatory level. In March 2008, the BCC adopted such a change. After moving through the NC Rule Review Commission, and subsequently an NC General Assembly legislative session, the new NC Accessibility Code format (IBC Chpt. 11 & A117.1) went into effect on January 1, 2010.

Electric car initiative and recognition of best practice

In November, 2009, Department management attended meetings at Charlotte Center City Partners with City officials and Nissan Motors, regarding the infrastructure required to introduce Nissan's electric car, the Leaf. Their key concern, based on experience with other jurisdictions across the country, was that permitting & inspection of SF residential EV support work could take weeks. We proposed that by using TIP and combining it with our current inspection response time (95%+ in the 1st day), the process could be reduced to 1-2 days. Nissan classed this as a "best practice" that others should consider. We have since received contacts from GM regarding their Volt, and followed up on their request to discuss our process with California officials (where inspections and permitting apparently can take several weeks), as well as discussions on process efficiency with the Council of Governments.

2010 Reorganization Plan

Responding to the Fy10 budget crisis, the Department launched an assessment of our P&I organization. With extensive input from line staff and management, as well as customers, a number of different options were considered. Ultimately, a change to team based service delivery was thought to align more closely with change tremors occurring in the commercial construction industry. Consequently, on May 5th, 2010, Code Enforcement converted service delivery to the 2010 Reorganization Plan. The Plan includes a number of changes, among them new B-E-M/P Code Administrator positions, focusing full time on interpretations, appeals, consistency and training. Perhaps most significantly, the Plan also introduced the new team based field service delivery approach, with the teams led by Code Enforcement Managers, serving as a ***"Key Point of Contact"*** for customer interfacing with us on field operations.

ISO Rating of #1 for Commercial Construction

Insurance Services Office (ISO) audits began in Mecklenburg County in 1992. Those first reports graded Mecklenburg County with a '4' in Commercial code enforcement and a '10' in residential. A subsequent 1997 audit elevated those numbers to '3' and '10' respectively, but these results fell far below local government expectations. After close analysis of the ISO grading criteria, we identified a number of major deficiencies. Consequently, in 1999 and 2000, Code Enforcement developed a 14-point strategy to elevate the Department's grade to an ISO rating of '1', the highest grade possible. To support this effort, we introduced four new policies in February 2000, addressing a number of key topics. ISO completed an audit of Code Enforcement, again, in September 2001. As a result of the 14-point strategy, and a tremendous effort by line staff and managers, in May 2003, ISO awarded the Department an ISO grade of '1' for commercial work, making Mecklenburg County the largest authority in the United States with this grade.

- Following our most recent audit, in 2009, ISO advised the Department we retained our previous ISO grades; a #1 grade in commercial and a #4 in residential.